

the United States Railroad Administration; anthracite coal miners from the 54- to the 48-hour week; bituminous coal miners from 51.6 to 48.0 hours; factory employees from 55.1 to 50.8; and employees in the building construction industry from 44.9 to 43.9.

A vastly greater decline in all industries except railroads began with the creation of the N.R.A. in June 1933 and has continued as a result of the unusual expansion of trade unionism and the adoption of laws regulating hours of labor. Under the influence of these factors, the work week in coal mining declined from 48 to 35 hours; in manufacturing from more than 50 to close to 40. In building the change in average full time hours was slight largely because the 40-hour week had become quite common even before the N.R.A., and on the railroads the 48-hour week remained unchanged.

During the prosperity of the 1920's average full time hours in manufacturing, coal mining, and on the railroads ceased to decline; there is, indeed, some evidence that they increased slightly in coal mining and manufacturing. This was in the main due to the lengthening of hours in some industries, like cotton textiles, in which substantial parts of the industry had adopted the 48- or 44-hour week during the War and had then abandoned the shorter week during the 1921 depression. At the same time other industries, such as iron and steel, canning and preserving, sugar refining, and lumber, which had retained unusually long full time hours during the War, reduced them materially from 1922 to 1929. The net result of these conflicting movements was to leave average full time hours relatively unchanged but to reduce the spread between the longest and shortest full time week. Thus in 1920 there was a range of 18 hours between 45.3 hours in the clothing industry and 63.1 in iron and steel. But by 1929 the spread had declined to 10 hours, from 45 hours in women's clothing to 55 in cotton goods and sugar refining.

During the depression 1929-32, likewise, although there were many forces, such as work-sharing and union agitation for the shorter week, making for reduced hours, the average full time week apparently was not changed and, when the N.R.A. was established, was roughly 50 hours in manufacturing and 48 in coal mining.

Throughout most of the period 1890-1937 there were large regional differences in full time hours within nearly all industries. On the whole, the longest week in manufacturing has persisted in the southern states and since 1919 the shortest week has prevailed in the Pacific States. Following the passage of the National Industrial Recovery Act in June 1933 and the setting up of the N.R.A., regional differences in full time hours have tended to decline and in some industries to disappear. The enforcement of the federal Fair Labor Standards Act,<sup>9</sup> approved June 25, 1938,

may be expected to strengthen this tendency and, in time, to establish a more uniform work week for most of American industry.

Union hours have been uniformly fewer than non-union and, in the past, a shorter work week has often been introduced into an industry through the terms of a contract between employers and the union of their employees. The strongly unionized building trades had a shorter week than any other industry until the N.R.A. began the general reduction of working hours. In coal mining, similarly, the 10- and 9-hour day, and hence the 60- and 54-hour week was to be found almost exclusively in the non-union coal fields; and in manufacturing the shortest week in the 1920's prevailed in men's and women's clothing, both highly organized industries. These divergencies between union and non-union hours are reflected in regional differences since it has been customary in this country for employers to seek relaxation of standards of labor and cost by moving from organized to unorganized regions.

When we consider the countries for which data are most comparable, the shortest week appears to be most common in the United States and France, where 40 hours has come to prevail. This is true at present in the United States and was true of France in October 1937, the latest month for which data are available. In Great Britain average full time hours in a wide and representative range of industries were 47.2 in October 1935. Australian labor was largely on a 44-hour week in 1937, while the industries of Sweden and Canada were in the main on a 48-hour week. The International Labour Office does not report, in its survey of October 1937, full time hours for Germany and Russia.

In this country it is possible to compare the movement of average full time with average actual hours per week in manufacturing since 1920 and in bituminous coal mining since 1932. The figures show that the movement of full time hours is an inadequate and often misleading index of the movement of actual hours. They show also that a material reduction in the length of the full time week does not necessarily stabilize employment. In bituminous coal mining the average actual per capita hours per week worked by miners during the first seven months of 1938 were 21.4. Since 35 hours were the full time week, the miners lost in this period 38.9 per cent of their potential full time hours. This compares with 44.2 per cent lost in 1932, when the full time week was 48.6 hours and business conditions were much worse. In manufacturing the percentage of time lost in the first eight months of 1938 was 20.5, as compared to 30.4 in the calendar year 1932.

<sup>9</sup> The Fair Labor Standards Act of 1938, effective October 24, 1938, establishes the following maximum weekly hours for employees engaged in commerce or in the production of goods for commerce: 44 hours during the first year from the effective date of the Act, 42 hours during the second year, and 40 hours thereafter.

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## Hours of Work in American Industry

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It is a commonplace of the economic history of industrial countries during the last century that the hours of work of nearly all classes of employees have been radically and progressively reduced. In 1851 the union of newspaper compositors in New York City recommended to the newspaper industry of that city a work week of six 12-hour days, or 72 hours<sup>1</sup>; in 1938 their week was 37½ hours. Within the last century the printer's week was thus reduced almost one half, the shortening by 34½ hours representing more than four 8-hour days. Employees in blast furnaces were expected to work a full time week of 84 hours as late as the turn of the last century, and have since seen their hours reduced to 40. From 1890 to 1937, a period during which records of hours of work have tended to become more complete and, on the whole, more reliable, the average length of the work week of factory employees in the United States declined from 60 to probably 42 hours, or 18 a week; of labor in the building trades from 55 to 39, or 16 a week; of steam railroad employees from 60 to 48, or 12 a week; and of anthracite and bituminous coal miners from 60 to 35, or 25 hours a week.

A full account of the decline in the length of the working week and the circumstances attending it is not available and cannot be had without considerable research extending back to the early history of American industry. From the historical records it appears that the reduction was at first gradual and cumulative. Since 1890, however, there have been two periods in which considerable cuts in hours were made during relatively brief spans of time. The first was during the World War, 1914-20, when the average

<sup>1</sup>Scale of Prices of the Printers Union of the City of New York, proclaimed February 1, 1851, in History of Wages in the United States from Colonial Times to 1928, U. S. Bureau of Labor Statistics, *Bulletin 499* (October 1929). The prices and schedules of hours that were covered in this document were proclaimed by the union, but there is no evidence that they were accepted and, hence, enforced by employers. There is reason to think, therefore, that the hours actually worked by newspaper compositors in New York City in 1851 may have exceeded 72 a week.

full time hours of factory employees declined from 55.1 to 51.0 a week; the second was the recent, and in this respect more spectacular, period of the N.R.A., 1933-35, when the average length of the prevailing work week in manufacturing industries was reduced by approximately 8 hours, from roughly 50 to about 42 hours.

The factors that help to explain and are responsible for these changes in working hours are many. Reductions in hours during the World War, and in similar periods of intense business activity, were in part the result of competition among industries for labor. For in such periods concessions in hours, like increases in wage rates, reflected the state of the labor market. Throughout their history, also, organized labor movements of all types have consistently advocated shorter work days and weeks. In trade union doctrine arguments for the reduction of hours have always occupied a central position—in part because the unions wished to give their members relief from the drudgery of labor and to win for them greater leisure, and, chiefly, because most unions saw in fewer per capita hours an approach to the solution or, at any rate, mitigation of the problem of unemployment. While, therefore, the gains in this direction were often made in years of prosperity when business was good and employment full and the added costs could be most readily absorbed, the incentive to reduce hours received its impetus in the antecedent period of depression and unemployment.

With the passage of time the reasons for a shorter working period became more elaborate and refined and the conditions under which concessions in hours might be granted apparently more frequent and widespread. The observed increase in per capita and man-hour output in the decade 1919-29 produced important revisions in both lay and professional opinion as to the function and benefits of progressively shorter periods of work. The American Federation of Labor, regarding the increased productivity of industry as a cause of the displacement of labor and, hence, of an increasing rate of unemployment, saw in the reduc-

Table 1  
Major Categories of Industry  
Average Full Time Hours of Work per Week, 1890-1937

Year	Manufacturing Industries National Industrial			Building Trades <sup>5</sup>	Steam Railroads <sup>6</sup>	Coal Mining Anthracite, <sup>8</sup> Bituminous <sup>9</sup>	
	Census of Manu- factures <sup>1</sup>	Con- ference Board <sup>2</sup>	Dept. of Commerce and Labor <sup>4</sup>			Anthracite, union hours <sup>8</sup>	Bituminous <sup>9</sup>
1890			59.9	55.2	60.0	60.0	60.0
1891			59.8	54.8	60.0	60.0	60.0
1892			60.0	54.3	60.0	60.0	60.0
1893			59.7	54.2	60.0	60.0	60.0
1894			59.3	54.3	60.0	60.0	60.0
1895			59.6	54.0	60.0	60.0	60.0
1896			59.5	53.8	60.0	60.0	60.0
1897			59.4	53.6	60.0	60.0	60.0
1898			59.6	53.3	60.0	60.0	52.3
1899	59.6		59.4	52.6	60.0	60.0	52.7
1900			59.1	52.0	60.0	60.0	52.6
1901			58.8	51.0	60.0	60.0	52.4
1902			58.5	50.2	60.0	60.0	52.3
1903			58.0	50.3	60.0	54.0	52.2
1904	57.9				60.0	54.0	51.7
1905					60.0	54.0	51.8
1906					60.0	54.0	51.7
1907				47.4	60.0	54.0	51.6
1908				46.7	60.0	54.0	51.7
1909	56.8			46.0	60.0	54.0	51.6
1910				45.5	60.0	54.0	51.9
1911				45.3	60.0	54.0	51.8
1912				45.2	60.0	54.0	51.9
1913				45.1	60.0	54.0	51.7
1914	55.1	54.9		44.9	60.0	54.0	51.8
1915				44.9	60.0	54.0	51.8
1916				44.7	60.0	48.0	51.9
1917				44.6	60.0 <sup>7</sup>	48.0	49.7
1918				44.3	..... <sup>7</sup>	48.0	48.7
1919	50.8			44.1	48.0 <sup>7</sup>	48.0	48.4
1920		49.9		43.9	48.0	48.0	48.2
1921	50.3	49.6		43.9	48.0	48.0	48.2
1922		49.9		43.9	48.0	48.0	48.4
1923	51.1	49.9		43.9	48.0	48.0	48.4
1924		49.7		43.9	48.0	48.0	48.5
1925		49.8		43.9	48.0	48.0	48.5
1926		49.8		43.8	48.0	48.0	48.4
1927		49.5		43.7	48.0	48.0	48.5
1928		49.6		43.5	48.0	48.0	48.5
1929	50.6	49.6		43.1	48.0	48.0	48.5
1930		48.6		41.9	48.0	48.0	48.5
1931		48.0		41.4	48.0	48.0	48.5
1932		47.9		40.6	48.0	48.0	48.6
1933				40.5	48.0	48.0	40.0
1934				39.0	48.0	48.0	35.1
1935				38.7	48.0	48.0	35.1
1936				38.7	48.0	48.0	35.1
1937		40.8 <sup>8</sup>		38.9	48.0	35.0	35.0 <sup>10</sup>

<sup>1</sup> Figures for 1909-29 computed from frequency distributions published in the U. S. *Census of Manufactures* for the various years; 1899 and 1904 from Paul F. Brissenden, *Earnings of Factory Workers, 1899-1927*, (U. S. Census Monograph X, 1929), p. 354.

<sup>2</sup> Covers 24 manufacturing industries; does not include iron and steel.

<sup>3</sup> Not strictly comparable with figures for earlier years; covers 27 industries, iron and steel, petroleum refining and cement having been added in 1937 to the original 24.

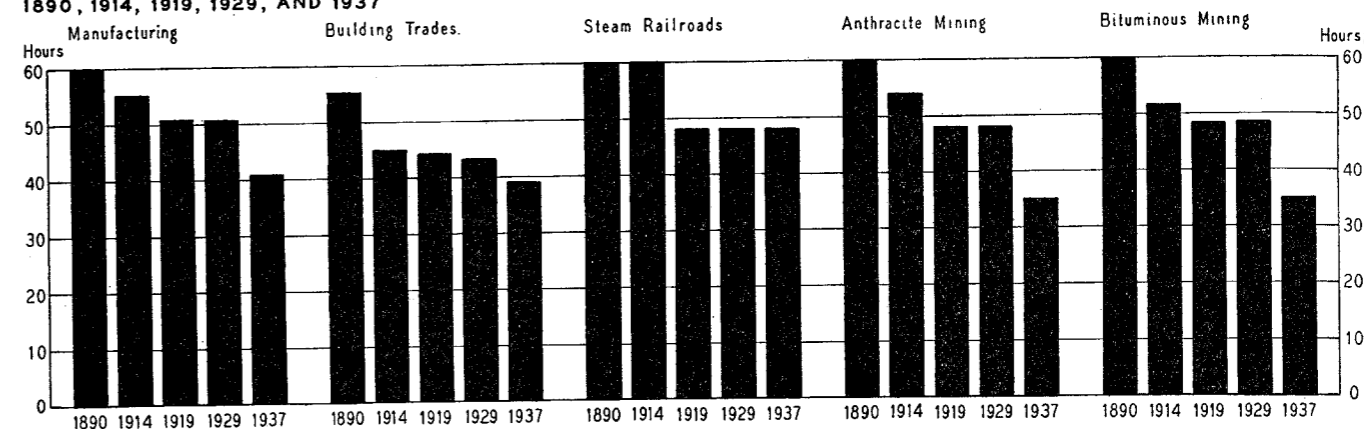
tion of the work week the most effective means of returning the unemployed to employment. At the same time the view became more generally accepted that the expanding output of 'mass-production' industries could be absorbed only by members of a working population who enjoyed more leisure and higher rates of pay.

The onset and unfolding of the depression of 1929-32 again shifted the emphasis to the value of reduced schedules of hours as a direct attack on the problem of unemployment. Organized labor continued with greater vigor than previously its campaign for a shorter work week, although it was then not strong enough to make its policies prevail.

Employers, likewise, faced by the unusual shrinkage in employment that marked the years 1930-33, turned to this measure as a device for spreading such employment as there was among as many employees as possible and, as a temporary expedient at least, accepted the view that fewer per capita hours meant more men employed. Some prominent employers, in fact, organized a national committee to encourage the adoption of shorter schedules of work. Through their initiative the 'share-the-work' movement assumed substantial proportions and, because of it, work spreading was probably more extensively practiced in this than in earlier depressions of this country.

Chart I

MAJOR CATEGORIES OF INDUSTRIES  
AVERAGE PER CAPITA FULL TIME HOURS OF WORK PER WEEK  
1890, 1914, 1919, 1929, AND 1937



(Footnotes to Table I concluded)

<sup>4</sup> Averages, weighted by number of employees covered, computed from figures published in the *Nineteenth Annual Report* of the U. S. Commissioner of Labor (1904), covering 456 occupations in 48 industries.

<sup>5</sup> Figures for 1890-1903 are averages, weighted by number of employees covered, computed from data for 19 individual occupations published in the *Nineteenth Annual Report* of the U. S. Commissioner of Labor (1904). It is not reported whether these are union or non-union hours, but probably they actually represent the levels of hours established by the unions. Figures for 1907-37 are computed from index numbers of average union hours of work in the building trades published by the U. S. Bureau of Labor Statistics in the *Monthly Labor Review*, November 1937, p. 1186.

<sup>6</sup> Estimated by assuming a 10-hour day, 1890-1917, an 8-hour day, 1919-37, and a 6-day week throughout.

<sup>7</sup> Prior to federal control, which lasted from December 27, 1917 to March 1, 1920, railroad employees generally worked a 10-hour day (sometimes a 9-hour day). This is subject to the important exceptions (1) that numerous railroads already had working agreements with their shop employees recognizing the 8-hour day, and (2) the basic 8-hour day had been established in 1917 for employees in train and engine service. By a series of regulations during 1918, the 8-hour day was formally extended to cover other classes of railroad labor. See Walker D. Hines, *War History of American Railroads* (Yale University Press, 1928), p. 189.

<sup>8</sup> Figures for 1902-37 compiled from union agreements as given in the *Report of the U. S. Coal Commission, Part II* and in the U. S. Bureau of Labor Statistics, *Monthly Labor Review*; figures for 1890-1901 estimated. The 9-hour day, 6-day week became effective April 1, 1903; the 8-hour day, 6-day week, on April 1, 1916; the 7-hour day, 5-day week, on May 1, 1937.

<sup>9</sup> Figures for 1903-36 computed from data published in the U. S. Bureau of Mines, *Minerals Yearbook, 1937*, p. 823. They refer to hours worked by the mines rather than by the men. Figures for 1890-1902 from Paul H. Douglas, *Real Wages in the United States, 1890-1926* (Houghton-Mifflin Company, 1930), p. 150. The 8-hour day, 5-day week became effective on October 2, 1933; the 7-hour day, 5-day week, on April 1, 1934.

<sup>10</sup> Estimated on the basis of the Appalachian Agreement which became effective on April 2, 1937 and provided for the continuation of the 7-hour day, 5-day week.

These various theories of the relation of employment to the length of the work week were all merged in the principles on which the terms of the National Industrial Recovery Act, adopted June 15, 1933, were based. In the administration of this law, it was assumed that shortening the work week would increase employment, and that raising the rate of wages, or the price of labor, would enhance the aggregate purchasing power of employees and thus give a further fillip to business and, hence, to employment. In accordance with these principles, the Recovery Administration, through the machinery of codes of fair competition, effected a drastic reduction in the hours of work. Although the N.R.A. lasted only two years, this aspect of its policy won wide public approval and the reductions in the work week accomplished by it persisted after its demise in June 1935. Sporadic efforts to return to a longer week were restrained after that date by the increase in the membership and power of labor unions and by the growth of legislation, federal and state, restricting hours of work.

During the long history of reductions in the length of the work week, several factors apparently explain the capacity of industry to absorb the burdens of cost necessarily

Table 2  
Manufacturing Industries

Percentage Distribution of Wage Earners according to Full Time Hours of Work per Week, 1909-1929<sup>1</sup>

Full Time Hours of Work per Week	Percentage of Wage Earners with Specified Full Time Hours of Work per Week					
	1909	1914	1919	1921	1923	1929 <sup>2</sup>
Under 40						0.5
40						2.8
Over 40, under 44	7.9	11.8	12.3	13.7	9.9	1.0
44						
Over 44, under 48			3.8	4.2	4.5	5.5
48			32.6	33.6	31.7	26.9
Over 48, under 54	7.3	13.5	16.5	18.2	21.9	25.1
54	15.4	25.8	9.0	7.8	8.8	6.3
Over 54, under 60	30.2	22.0	13.8	12.6	14.0	15.1
60	30.5	21.1	9.0	7.4	7.3	
Over 60, under 72	5.2	3.5	3.0	2.5	1.9	7.5
72	1.8	1.5				
Over 72	1.7	0.8				
Total	100.0	100.0	100.0	100.0	100.0	100.0
48 or less	7.9	11.8	48.7	51.5	46.1	46.0
60 or more	39.2	26.9	12.0	9.9	9.2	7.5

<sup>1</sup> Compiled from U. S. Census of Manufactures. Data for establishments having products under \$5,000 in value are included for 1909, 1914, and 1919 but not for later years.

<sup>2</sup> Covers only those workers for whom hours of work were reported. Hours were not reported for 1.0 per cent of all wage earners.

<sup>3</sup> Percentage whose hours were 44 and over, but under 45.

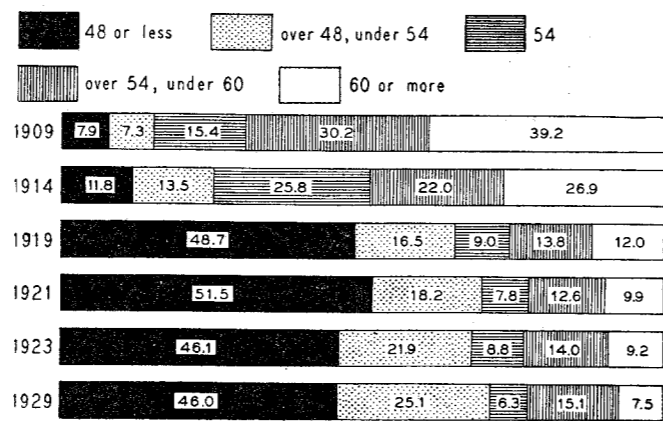
<sup>4</sup> Percentage whose hours were 45 and over, but under 48.

associated with this trend, since full time hours are rarely reduced materially without concomitant increases in wage rates. The first and most important has been the steady application of capital to American industry and the resulting expansion in the use of machinery in our productive processes. A second has been the improved morale and heightened personal efficiency of labor endowed with greater leisure and fewer hours of work. And a third has been the marked improvements in methods of management, such as have been associated with the development of scientific management since 1890, which have contributed heavily to increasing the productivity of industry. What limits there are or may be to the effectiveness of these factors is a moot question that requires for its answer data on costs more comprehensive and reliable than those now available and a better understanding than we now have of the sources of increased employment.

This *Bulletin* aims to describe the trends in full time hours in the major industries of the United States since 1890. The data are largely drawn from the records of governmental agencies, mainly the United States Census of Manufactures and the various reports of the United States Bureau of Mines and the United States Department of Labor and its predecessors, the Bureau of Labor and the Department of Commerce and Labor. For the years since 1920 some use is made of statistics of actual hours of work, and highly tentative comparisons are ventured between actual and full time hours. To suggest relative standards of working conditions in this and other countries, the average full time hours of work in the United States and in a selected list of foreign countries, based on materials published by the British Ministry of Labour and the International Labour Office at Geneva, are briefly compared at the close of this *Bulletin*.

Chart II

MANUFACTURING INDUSTRIES  
PERCENTAGE DISTRIBUTION OF WAGE EARNERS  
ACCORDING TO AVERAGE FULL TIME HOURS PER WEEK  
1909 - 1929



Source: U. S. Census of Manufactures

### I Average Full Time Hours in Major Categories of Industry

Measurement of changes in the hours of labor presents serious difficulties, due at times to obscurities in the definition of hours of work, but more frequently to the lack of reliable and comparable records. Difficulties of definition arise mainly from a persistent confusion between full time and actual hours. The two are not the same. The full time week (variously designated as normal, standard, nominal, scheduled, maximum) may be defined as the number of hours per week beyond which a shop is normally not expected to work. As such the full time week may be regarded as the maximum week. Hours worked in excess of this maximum are prohibited, or are permitted at penalty rates of wages higher than rates prevailing during normal hours, or at prevailing rates under strictly defined and limited conditions of emergency.

In addition to serving the function of specifying the maximum length of the work week, the full time week is one of the several factors on which rates of wages, both time and piece, are based, since most wage rates are fixed at points calculated to yield specified full time weekly earnings. For this reason revisions in schedules of full time hours are commonly accompanied by proportionate revisions in the schedules of wage rates. Accordingly when negotiations are carried on for reductions in hours, it is usually assumed that at least the same weekly wages will be paid for the shorter week. In the administration of the N.I.R.A. the usual procedure observed in the making and administration of codes was to raise the hourly rates of wages sufficiently to compensate employees for losses in hours. While this procedure was not literally applied in every one of the thousands of occupations under the jurisdiction of the Recovery Administration, it was applied to most of them, and average rates of wages in effect after the terms of the codes were in operation reflected this adjustment of wage rates to full time hours.

Actual hours of work rarely coincide with full time hours so defined, and may be expected to exceed full time hours when business is very active, when there is a shortage of labor and overtime is being worked, and to fall short of them when business is dull and labor plentiful. In the long run, actual hours will, in all probability, have the same general trend as full time hours, but deviations of one from the other will occasionally be more or less sharp, depending on the state of business and employment. Because this distinction is not always strictly observed in collecting statistics of hours, there is some evidence that per capita actual hours worked per week are occasionally reported as full time hours. This seems to have been done for some industries during the worst phases of the 1929-32 depression, when considerations of labor cost must have led some indus-

tries to lengthen their schedules of full time hours. If such action was taken it is not reflected in the published data and, in consequence, average full time hours during this depression are represented as being at a lower level than they may have been in actual plant practice.

In each of the five major industries for which there is a more or less continuous record, average full time hours per week declined substantially between 1890 and 1937. The reductions ranged from 25 hours a week in the anthracite and bituminous coal industries to 12 hours on steam railroads. At the beginning of this period prevailing hours in all except the building industry were 60 a week. At its end, in 1937, the overwhelming majority of employees in all these industries except railroads had full time weeks of 40 hours or less. On the railroads the 48-hour week still prevailed. This general trend in hours for the period 1890-1937 is shown in Table 1, and for the selected years, 1890, 1914, 1919, 1929, and 1937, in Chart I.

For railroad labor<sup>2</sup> the greatest single reduction in hours was made in the three years 1917-19, when the provisions of the Adamson Act, adopted in 1916, introduced the 8-hour day for train service employees, and orders of the United States Railroad Administration reduced the hours of work of other classes of employees to the same level. In factories there was a gradual decline in hours in the quarter-century from 1890 to 1914, a period during which the total reduction in the work week amounted to 4.8 hours. During the War years, hours were reduced more rapidly, largely because some industries went from the 48- to the 44-hour week, and average full time hours in factories declined, 1914-19, from 55.1 to 50.8, or 4.3 hours a week. During the prosperous years 1922-29 average full time hours of all classes of labor remained remarkably steady and were, except for a slight decline in the hours of building employees, no lower at the end than at the beginning of this period.

The reliability of the record of hours during the depression of 1929-32 is, to say the least, dubious. The re-

<sup>2</sup> The stability shown by the hours of work of railroad employees, 1890-1917, and of coal miners over many years of this whole period is probably due more to the inadequacy of the records than to relative infrequency in the changes in the length of the work week. There is a strong presumption, for example, that the 60-hour week on the railroads was the week worked by most employees, and was not the average full time week of all employees. A report made by the Railroad Wage Commission, April 30, 1918, showed that in December 1917, 64.3 per cent of all railroad employees worked a 6-day week and 35.7 a 7-day week. Furthermore 52.7 per cent worked the 10-hour day, 9.7 the 9-hour day, 4.6 the 11-hour day, 12.9 the 12-hour day, and some 20 per cent the 8-hour day. According to these figures, therefore, the average full time week of railroad employees at that date was 62.2, and not 60 hours. Unfortunately, however, the data required for computing such averages are not available for either railroad or coal mining employees over this period.

Table 3

## Bituminous Coal Mining

Percentage of Men Employed in Mines that had Standard Working Days of 7, 8, 9, and 10 hours, and the Average Full Time Working Day and Week, 1903-1937<sup>1</sup>

Year	Percentage of total employees in mines working:				Weighted average working day (hours)	No. of working days per week <sup>2</sup>	Estimated full time working week <sup>3</sup> (hours)
	7 hours	8 hours	9 hours	10 hours			
1903		56.4	17.1	26.5	8.70	6	52.2
1904		62.1	13.8	24.1	8.62	6	51.7
1905		61.1	13.6	25.3	8.64	6	51.8
1906		63.0	13.5	23.5	8.61	6	51.7
1907		64.0	11.6	24.4	8.60	6	51.6
1908		63.5	11.1	25.4	8.62	6	51.7
1910		62.1	11.3	26.6	8.65	6	51.9
1911		62.9	10.9	26.2	8.63	6	51.8
1912		61.6	11.5	26.9	8.65	6	51.9
1913		61.9	15.2	22.9	8.61	6	51.7
1914		60.7	15.4	23.9	8.63	6	51.8
1915		59.6	17.0	23.4	8.64	6	51.8
1916		58.6	17.4	24.0	8.65	6	51.9
1917		79.0	12.6	8.4	8.29	6	49.7
1918		90.6	6.7	2.7	8.12	6	48.7
1919		95.5	3.5	1.0	8.06	6	48.4
1920		97.1	2.0	0.9	8.04	6	48.2
1921		96.6	2.9	0.5	8.04	6	48.2
1922		95.1	4.0	0.9	8.06	6	48.4
1923		94.7	4.2	1.1	8.06	6	48.4
1924		93.7	5.1	1.2	8.08	6	48.5
1925		93.5	5.4	1.1	8.08	6	48.5
1926		93.7	5.5	0.8	8.07	6	48.4
1927		93.4	5.6	1.0	8.08	6	48.5
1928		93.1	6.1	0.8	8.08	6	48.5
1929		92.5	6.7	0.8	8.08	6	48.5
1930		92.4	6.6	1.0	8.09	6	48.5
1931		93.0	6.1	0.9	8.08	6	48.5
1932		91.9	6.2	1.9	8.10	6	48.6
1933							
Before Oct. 2							
After Oct. 2		92.6	4.9	2.5	8.10	6	48.6
1934							
After April 1 <sup>4</sup>	97.3	2.6	0.1	.... <sup>5</sup>	7.03	5	35.2
1935	97.8	2.0	0.2	.... <sup>5</sup>	7.02	5	35.1
1936 <sup>6</sup>							35.1
1937 <sup>7</sup>							35.0

<sup>1</sup> U. S. Bureau of Mines, *Minerals Yearbook*, 1937, p. 823, and 1938, p. 694. These figures refer to hours worked by the mines rather than by the men. A few mines that worked more than 10 hours or less than 7 hours (less than 8 hours prior to April 1, 1934) have been excluded, as have also all mines for which the reports were defective. Data are not available for 1909. As interpreted in union agreements, the 8-hour day means 8 hours of labor at the usual working place, exclusive of time for lunch and exclusive of time spent in going from the entrance of the mine to the working place and back again.

<sup>2</sup> No data on the number of days worked during a full time week are reported for the early years. It is assumed in the literature that the 6-day week prevailed until October 1933 when the 5-day week was introduced. It is likely, however, and there is some evidence to support this presumption, that some mines were working 7 days a week in the early years of this period and that after the World War some mines were on the 5-day week.

<sup>3</sup> Estimates of the National Bureau of Economic Research. The weighted average working day was multiplied by the estimated number of days worked per week.

ported full time hours of building and factory labor declined slightly from 1929 to 1932, and the hours of work of railroad and coal mining employees remained unchanged. In view of the depths to which business activity descended in this period and the pressure that was exerted to reduce costs either by cutting wage rates or by requiring a longer work week at the same weekly rate, the probabilities are great that the full time work week was, at least in some industries, materially lengthened during the several years of depression following 1929. Certainly in parts of the clothing and textile industries it is commonly believed that hours were raised above their level of the 1920's; and in the building trades there is reason to believe that on some operations the device of the kickback in wages was used together with collusive arrangements for lengthening the work week and waiving penalty rates for overtime work. But if more hours were indeed worked, there is little in the records of either governmental bureaus or the National Industrial Conference Board to confirm this fact.

The figures of full time hours published by the National Industrial Conference Board probably understate somewhat the length of the full time week in manufacturing during the whole period 1920-38 for which they are available. This is partly because the Board's sample is heavily weighted with large establishments and under-represents industry in the South. During the depression, also, the full time hours reported were so low that the Board itself believed that some establishments were confusing full time with actual hours and for this reason discontinued the series from April 1932 to February 1937. For this period, since the Census of Manufactures ceased to tabulate statistics of full time hours with the Census of 1929, governmental data pertain to only a sample of manufacturing industries collected by the United States Bureau of Labor Statistics. Added to these considerations is the possibility that plants working excessively long weeks hesitated to report the fact to either public or private statistical agencies.

Whatever happened during the depression, the following years of recovery saw the greatest reduction in hours of which we have any record in this country. The change occurred in two phases. Under the N.R.A., 1933-35, an effort was made to reduce all hours to 40 or fewer a week. The 40-hour week became the most common work period established in the codes of fair competition. A few industries, principally clothing manufacturing and coal mining, reduced hours to 35 or 36. In many industries, the full time

work week averaged somewhat over 40 hours through the year because of allowances for seasonal and other peaks of production. In consequence of these variations average full time hours of factory employees were probably about 42 per week in 1935. Although the first effect of the termination of the N.R.A. in June 1935 was to set in train a movement to revert to a longer work week, it did not gain much momentum. Before it was well started, the spectacular gains of organized labor and the change in the decisions of the United States Supreme Court bearing on the constitutionality of various types of labor legislation, which paved the way for the enactment of federal and state laws regulating the hours of labor, reversed this trend and hours began once more to be reduced. By 1937, consequently, average full time hours were probably fewer than in 1935, if not 1933-34, and for all factory employees slightly exceeded 40 a week.

In respect of hours, as of most other working conditions, there has long been considerable diversity in the practice of American industry. Before the activities of the N.R.A., a prevailing level of hours had rarely been applicable to all the employees in even a single industry. For so heterogeneous a category as manufacturing, which includes hundreds of industries and millions of employees, an average of full time hours is bound to obscure the wide range of hours actually effective and hence to conceal the true incidence of reductions in the length of the work week. How wide this range has been in manufacturing industries and how it has changed over the twenty years 1909-29 for which this type of material is available is shown in Table 2 and Chart II.

The most drastic changes over this whole period apparently took place at the upper and lower ranges of prevailing schedules of hours. Employees working 48 or fewer hours a week increased from 7.9 to 46.0 per cent of total factory employees, and those working 60 or more hours declined from 39.2 to 7.5 per cent of the total. The 54-hour week, or six 9-hour days, tended to apply to a declining fraction of the work-force of manufacturing industry. On the other hand, the proportion employed on the 48-hour week appeared to decline from 1919 to 1929, while the percentage of those working from 48 to 54 hours, presumably on a 50-hour week, increased quite considerably. It may be said that a substantial number of the employees who had their hours reduced to 48 or fewer during the War surrendered a considerable part of their gains during the decade 1919-29.

(Footnotes to Table 3 concluded)

<sup>4</sup> Data as reported for December 1934.

<sup>5</sup> Less than .05 of one per cent.

<sup>6</sup> Reported by the U. S. Bureau of Mines, *Minerals Yearbook*, 1938, p. 694. The distribution of mines by length of work day is not given for this year.

<sup>7</sup> Estimated on the basis of the Appalachian Agreement which became effective on April 2, 1937 and provided for the continuation of the 7-hour day, 5-day week.

When full time hours per week were reduced the reduction was often accomplished by cuts in the length of the working day. Thus, as the number of hours worked per day declined from 10 to 9 and then to 8, the week declined from 60 to 54 and 48. The next reduction was made by introducing the half-holiday on Saturday so that a 44-hour

week consisted of five 8-hour days and 4 hours on Saturday. With the introduction of the 40-hour week the number of working days was most usually reduced to 5; and with the 35-hour week the hours per day dropped from 8 to 7.

The way in which this sort of shift occurred is illustrated in changes in the length of the work day and week of bi

Table 4

## Major Manufacturing Industries

Average Full Time Hours of Work per Week, 1890-1929<sup>1</sup>

Industry	Average no. of wage earners employed in 1929 <sup>2</sup>	Average Full Time Hours of Work per Week							
		1890	1899	1909	1914	1919	1921	1923	1929
<i>Textiles</i>									
Cotton goods	424,916	61.1	61.2	59.4	57.1	53.2	53.0	53.8	54.8
Silk goods	130,467	58.9	57.4	57.2	55.1	49.1	49.4	49.3	50.9
Woolen and worsted goods	146,959	60.1	59.4	57.8	55.4	49.4	49.7	48.5	50.5
Knit goods	208,488	59.9	59.3	58.2	55.1	51.2	51.3	51.3	52.2
<i>Clothing</i>									
Men's clothing <sup>3</sup>	188,069	57.6	57.3	54.6	51.6	45.3	45.3	45.4	45.9
Women's clothing	187,500			53.4	51.5	45.3	45.3	45.4	45.2
Fur-felt hats	16,539	58.1	56.5	53.8	51.6	46.4	47.4	47.9	47.8
Shirts	59,830			53.4	48.4	48.3	48.6	48.6	48.6
<i>Foods</i>									
Bread and other baking	200,841	65.6	63.4	58.4	55.9	50.4	50.7	50.6	50.9
Meat packing	122,505	59.7	59.8	58.2	58.1	49.2	48.8	49.5	49.0
Cane sugar refining	13,912		70.6	65.0	62.9	56.3	56.9	54.9	54.8
Canning and preserving <sup>4</sup>	98,866	76.8	76.9	59.5	57.6	55.0	54.4	54.0	52.9
<i>Printing and publishing</i>									
Book and job	150,649	59.0	56.7	50.8	49.3	48.1	46.9		46.3
Newspaper and magazine	129,660	52.4	50.4		50.0	48.5	47.8		47.6
<i>Metals and machinery</i>									
Agricultural implements	41,663	59.6	59.4	57.4	56.3	53.3	51.2	52.5	52.6
Steam railroad cars <sup>5</sup>	368,681	58.6	58.4	56.6	54.8	50.0	50.3	50.2	50.5
Electrical machinery	328,722	57.8	58.2	55.4	54.2	49.6	48.7	49.2	49.4
Foundries and machine shops	454,441	59.5	59.0	56.5	55.1	51.5	50.4	51.4	51.1
Motor vehicles <sup>6</sup>	447,448			57.0	54.5	50.6	49.9	50.3	50.7
Shipbuilding	55,089	58.5	58.2	56.1	53.0	45.4	45.8	47.1	47.5
Structural iron	54,947			55.0	52.0	50.8	51.6	51.6	52.4
<i>Leather</i>									
Leather	49,932	59.2	59.3	58.0	57.0	50.8	51.3	51.4	51.5
Boots and shoes	205,640	58.2	57.8	56.5	54.9	49.1	48.9	49.1	49.3
<i>Lumber</i>									
Lumber (sawmills)	419,084	62.7	62.4	59.6	59.8	56.1	56.1	55.8	53.9
Planing mills	90,134	59.1	57.9		55.1	52.6	51.1	51.5	50.4
Furniture	193,399	59.0	58.4	57.7	56.0	55.7	51.7	52.2	51.8
<i>Miscellaneous</i>									
Rubber tires and tubes	83,263						50.2	48.3	47.5
Petroleum refining	80,596		64.7	58.7	58.4	51.4	51.6	51.0	52.7
Cigars and cigarettes	105,308	57.4	57.9	53.9	53.0	50.4	50.0	50.2	50.4
<i>All manufacturing</i>	8,838,743	59.9	59.4	56.8	55.1	50.8	50.3	51.1	50.6

<sup>1</sup> Figures for full time hours per week for 1890 and 1899 are computed from data for individual occupations published in the *Nineteenth Annual Report* of the U. S. Commissioner of Labor (1904); for 1909-29 they are computed from frequency distributions of the total wage earners in each industry published in the *U. S. Census of Manufactures* for each census year.

<sup>2</sup> Covers canning and preserving of fruits and vegetables only.

<sup>3</sup> *U. S. Census of Manufactures, 1929.*

<sup>4</sup> Covers both construction and repair work.

<sup>5</sup> Includes work clothing in all years; includes shirts, 1890-1909.

<sup>6</sup> Includes the manufacture of motor-vehicle bodies and parts.

tuminous coal miners. Table 3 shows the percentage of miners working the 10-, 9-, 8-, and 7-hour day, in each year, 1903-37. More than half worked an 8-hour day in 1903, more than a quarter worked 10 hours a day, and about one-sixth, 9 hours. These proportions remained virtually unchanged until the World War when there began a strong movement toward a universal 8-hour day in coal mines. By 1920, 9- and 10-hour days applied to only 3 per cent of the miners. During the 1920's the tendency to lengthen the work day appeared again, and by 1929 nearly 7 per cent of the miners were on a 9-hour day. This tendency apparently persisted during the depression, 1929-32, and is confirmed by the slight increase in the proportion of miners who had returned to 10 hours during 1932. The effect of the N.R.A. and of collective agreements between the United Mine Workers and coal operators appears in the virtual elimination of the 9- and 10-hour days in October 1933. The next and latest change, made April 1, 1934, replaced the 8- with the 7-hour day and after that date 97 per cent of the miners worked a 35-hour week of five 7-hour days.

It is clear from these data also that changes in average full time hours worked in an industry do not usually affect all employees. Thus when there was the substantial reduction in average hours, 1916-20, from 51.9 to 48.2 a week, nearly 60 per cent of the miners, who were already on an 8-hour day in 1916, failed to profit from this change. But the considerable number of miners who passed from the 10- to the 8-hour day in this period gained 2 hours a day, or 12 a week. Only when virtually the entire industry changed from a 6- to a 5-day week, as in 1933, and from an 8- to a 7-hour day, as in 1934, did the great majority of employees share simultaneously in the reduction in hours.

The wide range observed in the dispersion of hours in manufacturing industry as a whole is, of course, in part

accounted for by the great diversity in hours among the major industries that comprise the whole category of manufacturing. Average full time hours in the most important of these industries, exclusive of iron and steel, are shown in Table 4 for selected years, 1890-1929. During these 40 years hours were reduced in all these industries. The greatest reduction, 24 hours a week, was in canning and preserving where the week was longest in 1890. For nearly all these industries, the most substantial reduction in the shortest time took place in the War years, 1914-19. Between 1919 and 1929 the week was lengthened, although slightly, in about half of the industries. Only in the printing and publishing, cane sugar refining, canning and preserving, lumber, and furniture industries were hours appreciably fewer in 1929 than in 1919. Apparently the longest average full time week in 1929 in these industries was 54.8 hours in cotton goods and cane sugar refining, although lumber mills followed closely with a week of 53.9 hours.

At the same time the range of variation in hours tended to become appreciably narrower. In 1890 when the most common work week in manufacturing was about 60 hours, the difference between the longest week, 77 hours in canning and preserving, and the shortest, 52 in newspaper and magazine printing, was 25 hours. In 1929 when the most usual full time week for factory employees was about 50 hours, the range had declined to roughly 10 hours, from 55 hours in the cotton goods and cane sugar refining industries to 45 in women's clothing.

The case of iron and steel merits special attention because of the persistence in it of the 12-hour day and the striking reduction in hours that followed its abandonment. The average length of the full time work week is shown for the iron and steel industry and its major subdivisions, 1890-1929, in Table 5. The movement of hours in this industry reveals several peculiarities. Over the whole period 1890-

Table 5

## Iron and Steel Industry

Average Full Time Hours of Work per Week, 1890-1929<sup>1</sup>

	1890	1899	May 1914	May 1915	Oct. 1920	Oct. 1922	Jan. 1924	Jan. 1926	Mar. 1929
All departments	66.6	65.8	64.9	65.5	63.1	63.2	55.2	54.4	54.6
Blast furnaces	84.0	84.0	74.8	74.9	72.1	72.3	59.7	59.8	60.7
Bessemer converters	63.1	64.8	68.4	68.7	70.3	68.7	52.3	52.6	53.7
Open-hearth furnaces	73.0	72.1	74.5	74.4	68.7	70.8	58.0	57.1	57.7
Puddling mills	57.8	58.3	53.2	52.2	53.9	52.1	55.7	52.1	50.3
Blooming mills	64.6	61.3	70.5	71.0	67.5	68.0	54.6	54.2	55.0
Plate mills			69.0	69.8	68.8	66.2	57.2	55.8	58.0
Rail mills	59.3	65.2	70.1	70.9	61.2	61.5	57.4	55.5	56.0
Bar mills	65.9	61.4	61.7	61.4	61.8	61.2	55.6	54.7	55.6
Sheet mills			52.3	52.5	50.3	51.1	50.2	48.9	48.9
Tin-plate mills		56.8	46.0	50.4	50.6	49.9	48.8	48.1	47.4

<sup>1</sup> Figures for 1890 and 1899 are computed from data for individual occupations published in the *Nineteenth Annual Report* of the U. S. Commissioner of Labor (1904). Figures for 1914-29 are based on special studies of the U. S. Bureau of Labor Statistics and appear in *Bulletin 513*.

1929 average hours declined by 12 a week, somewhat more than the decline for all manufacturing. Between 1890 and 1914 the reduction was very slight, less than 2 hours a week. During the War the drop in hours in this industry was again much less than in most others. But from 1922 to 1924, when average full time hours in factories remained stable, they were sharply reduced in iron and steel; they fell from 63.2 to 55.2 hours, or 8 a week. This reform was the result of rising public disapproval of the continuance of the 12-hour day in steel mills and a decision reached by most of the industry in 1923, after conferences between its leaders and President Harding, to begin the abandonment of this excessively long work day. The effect of this decision is most striking in the reduction in the full time hours of blast furnaces from 72.3 a week in 1922 to 59.7 in 1924.

Since the full time week, as reported by official and non-official agencies, did not vary much between 1929 and 1933, some idea of the incidence of reductions in hours made under the N.R.A., 1933-35, can be had by examining the dispersion of hours in 1929. Table 6 shows the distribution of wage earners according to full time hours per week in major divisions of manufacturing in 1929. In the cotton goods industry, where maximum hours per week were fixed by the Code of Fair Competition at 40, only 1.2 per cent of the employees were working a 40-hour week or less in 1929. In fact 98 per cent of cotton textile workers were working 45 or more hours per week, while 63 per cent were working more than 54 hours. For most employees in this industry, therefore, the introduction of the 40-hour week meant a reduction of at least 14 hours a week. The same thing was more or less true in the iron and steel and lumber industries, while the reduction was even greater in petroleum refining, which went to a 36-hour week under the N.R.A. In many other industries, most of the employees had work weeks ranging from 45 to 54 hours, and for the majority the 40-hour week amounted to a reduction of 8 or 10 hours a week. Only in the clothing, printing and publishing, shipbuilding, motor vehicle, and rubber tire industries was there a substantial number who were already on weekly schedules of less than 45 hours. For that part of this group of employees which went to a 40-hour week, the reduction was on the whole moderate. But in the two great divisions of the clothing industry, men's and women's clothing, where maximum hours were fixed by the codes at 36 and 35 respectively, those employees who were on a 44-hour week in 1929 gained by the change 8 and 9 hours a week.

Because the Census of Manufactures ceased to tabulate and publish data on full time hours in all its reports after 1929, we must depend for the record of the years since on fragmentary and occasional data reported by the United States Bureau of Labor Statistics, the Codes and Reports

of the N.R.A., and a monthly series, purporting to be full time hours, published by the National Industrial Conference Board, for 1914, 1920-32, and now currently reported since February 1937. All these series, however, are substantially in accord, at least with respect to the stability of hours, 1929-33, and the amount of the reduction in the length of the full time work week between 1933 and 1937. Perhaps the best summary of the course of hours in manufacturing during the depression 1929-32 can be derived from the special reports of the United States Bureau of Labor Statistics. The movement of full time hours in selected industries, 1928-34, as reported in these special studies, is shown in Table 7.

While this is a small group of industries, it is a representative one and is not untypical of manufacturing as a whole. In the important iron and steel industry the full time week declined slightly during the depression, as it apparently did also in the motor vehicle and sawmill industries. In the rest, it either remained stationary or registered fractional increases.

For the period of the N.R.A., aside from the provisions of the codes themselves, no comprehensive statistics of average full time hours are available. A few of the special studies by the United States Bureau of Labor Statistics included in Table 7 show how precipitate was the drop in hours consequent to the adoption of codes, and suggest how general, within those industries, was the incidence of reduced hours. Thus average full time hours in the silk and rayon industry dropped from 50.9 in April 1933 to 39.8 in August; in dyeing and finishing, hours were 51.9 in July 1933 and 40.4 in August.

Table 8 shows the distribution of codes according to the full time work week specified for factory or 'general' workers. Thus 85 per cent of the codes provided for either a straight maximum of 40 hours or for a maximum of 40 hours exceeded during a limited portion of the year. How much these tolerances affected the average full time week in industries for which they were allowed is not known, but occasional studies made by the Recovery Administration show that the average full time week in this class of industry was not much in excess of 40 hours.

After the N.R.A., the National Industrial Conference Board series alone remains. Since it is well known that the hours of factory employees have tended to decline with the recent revival of trade unionism and the adoption of laws regulating hours of labor, the average full time hours reported by this agency may be used with some degree of confidence. They probably reflect with reasonable accuracy the current course of full time weekly hours in manufacturing, although they probably understate the level of such hours by a small amount, perhaps by 1 or 2 hours a week.

## II Regional Differences in Full Time Hours

The wide diversity in wage rates and other standards of working conditions in the various regions comprising the continental area of the United States finds its counterpart in persistent differences in the length of the work week. While the observed decline in average full time hours in the whole country, 1899-1929, occurred in all geographical

areas, it was greater in some than in others, and differences persisted throughout this period. Table 9 shows average full time hours in manufacturing industries, 1899-1929, by geographical areas.

In 1899 the shortest week (58.5 hours) prevailed in New England and the longest (62.8) in the West South Central States, the range being 4.3 hours per week. By 1919 the

Table 6

### Selected Manufacturing Industries

#### Distribution of Wage Earners according to Full Time Hours of Work per Week, 1929<sup>1</sup>

Industry	Percentage of Wage Earners whose Full Time Hours of Work per Week were:					
	not reported	40 and under	over 40, under 45	45 to 48, inclusive	over 48, not over 54	over 54
<i>Textiles</i>						
Cotton goods	0.0	1.2	0.5	21.3	13.6	63.4
Silk goods	0.0	0.5	13.5	23.1	47.7	15.3
Woolen and worsted goods	0.0	0.1	1.6	50.7	36.6	10.9
Knit goods	0.0	0.4	3.9	26.7	42.1	26.8
<i>Clothing</i>						
Men's clothing <sup>2</sup>	2.4	7.5	61.2	16.5	11.8	0.7
Women's clothing	2.1	17.7	45.3	22.1	12.5	0.2
Fur-felt hats	0.0	4.3	28.2	37.0	29.5	1.0
Shirts	0.7	1.0	23.4	37.0	36.8	1.1
<i>Foods</i>						
Bread and other baking	3.9	0.9	4.5	39.5	35.4	15.9
Meat packing	0.0	1.7	8.1	67.2	13.8	9.2
Cane sugar refining	0.0	0.0	0.0	20.7	18.7	60.5
Canning and preserving	1.5	4.6	3.7	20.9	32.5	36.8
<i>Printing and publishing</i>						
Book and job	2.1	0.8	44.6	47.0	5.2	0.2
Newspaper and magazine	4.5	0.9	19.2	66.7	7.4	1.4
<i>Metal and machinery</i>						
Agricultural implements	0.4	0.1	2.8	2.4	78.5	15.8
Steam railroad cars <sup>3</sup>	0.0	3.4	6.3	59.8	0.7	29.8
Electrical manufacturing	0.2	0.2	5.2	59.2	31.7	3.5
Foundries and machine shops	0.5	1.9	7.9	25.6	47.0	17.1
Iron and steel	0.0	3.2	5.4	38.5	11.5	41.4
Blast furnaces	0.0	0.0	0.0	0.0	40.4	59.6
Steel works and rolling mills	0.0	3.5	5.8	38.4	12.2	40.2
Motor vehicles, incl. bodies and parts	0.0	13.0	2.2	6.4	67.1	11.4
Motor vehicles	0.0	19.6	1.8	6.9	68.6	3.1
Motor-vehicle bodies and parts	0.0	6.1	2.6	5.8	65.5	19.9
Shipbuilding	0.4	0.1	31.9	49.1	17.5	1.2
<i>Leather</i>						
Boots and shoes	0.1	2.3	8.4	45.9	41.1	2.1
Leather	0.0	1.1	4.2	8.8	80.2	5.7
<i>Lumber</i>						
Lumber (sawmills)	7.5	3.8	1.1	22.7	11.5	53.4
Planing mills	1.6	5.3	20.0	18.5	31.0	23.6
Furniture	0.5	3.8	9.0	13.2	48.3	25.2
<i>Miscellaneous</i>						
Rubber tires and tubes	0.0	1.1	23.9	66.3	6.0	2.6
Petroleum refining	0.0	0.0	0.3	51.9	1.6	46.2
Cigars and cigarettes	0.5	2.7	10.4	24.2	52.4	9.7
<i>All manufacturing</i>	1.0	3.2	10.1	32.1	31.2	22.4

<sup>1</sup> Computed from data published in the *U. S. Census of Manufactures, 1929*.

<sup>2</sup> Does not include work clothing.

<sup>3</sup> Covers both construction and repair work.

Table 7

Average Full Time Hours of Work per Week, Selected Manufacturing Industries, 1928-1934,<sup>1</sup> and Basic Maximum Hours of Work per Week under the Codes of Fair Competition, 1933-1935

Industry	Average Full Time Hours of Work per Week							Basic Maximum Hours under Code of Fair Competition
	1928	1929	1930	1931	1932	1933	1934	
<i>Textiles</i>								
Cotton goods	53.4		53.4		53.4			40
Silk and rayon goods				50.7		Apr. 50.9	Aug. 39.8	Aug. 39.7
Hosiery and knit underwear	51.3		51.7		51.6			40 <sup>5</sup>
Hosiery	52.1		52.2		51.9			40
Knit underwear	50.0		50.3		50.7			40 <sup>5</sup>
Woolen and worsted goods	49.3 <sup>2</sup>		49.6		50.3	July 51.9	Aug. 40.1	Aug. 40.1
Dyeing and finishing textiles			50.9		51.3		Aug. 40.4	Aug. 40.2
<i>Clothing</i>								
Men's clothing <sup>3</sup>	44.0		44.3		44.4			36
<i>Foods</i>								
Cake baking				51.0				40
Bread baking				54.9				40
Slaughtering and meat packing		49.2		49.2				
Cane sugar refining			58.7					
<i>Metal and machinery</i>								
Iron and steel, all departments		54.6		52.4		Mar. 51.5		40 <sup>7</sup>
Blast furnaces		60.7		57.2		Mar. 55.1		40 <sup>7</sup>
Bessemer converters		53.7		53.3		Mar. 52.7		40 <sup>7</sup>
Open-hearth furnaces		57.7		53.8		Mar. 53.3		40 <sup>7</sup>
Puddling mills		50.3		53.0		Mar. 52.8		40 <sup>7</sup>
Blooming mills		55.0		52.6		Mar. 52.5		40 <sup>7</sup>
Plate mills		58.0		56.7		Mar. 53.5		40 <sup>7</sup>
Rail mills		56.0		54.9		Mar. 53.2		40 <sup>7</sup>
Bar mills		55.6		55.0		Mar. 54.1		40 <sup>7</sup>
Sheet mills		48.9		47.8		Mar. 46.9		40 <sup>7</sup>
Tin plate mills		47.4		47.0		Mar. 46.9		40 <sup>7</sup>
Motor vehicles <sup>4</sup>	49.4		48.8		48.4			40 <sup>8</sup>
Foundries		51.0		50.3		Apr.-Je. 49.5		40 <sup>9</sup>
Machine shops		50.3		49.8		Apr.-Je. 48.5		40 <sup>9</sup>
<i>Leather</i>								
Boots and shoes	49.1		48.9		48.9			40 <sup>10</sup>
Leather					50.4			40 <sup>11</sup>
<i>Lumber</i>								
Furniture		51.9		51.8				40 <sup>12</sup>
Sawmills	56.6		56.5		55.8			40
<i>Miscellaneous</i>								
Portland cement		60.8		59.0				36 <sup>13</sup>
Glass				50.2				36&40 <sup>14</sup>
Rayon and allied products			50.2	48.2				40 <sup>15</sup>
Cigarettes			49.9					40
Petroleum refining		48.8				May 41.2	Nov. 35.9	May 36.0

<sup>1</sup> Compiled from the reports of special studies made by the U. S. Bureau of Labor Statistics. The figures are averages for periods of a month or more within the year, chosen by the Bureau as representative of that year, not averages for the year.

<sup>2</sup> Covers Northern mills only.

<sup>3</sup> Does not include work clothing.

<sup>4</sup> Does not include the manufacture of motor-vehicle bodies and parts.

<sup>5</sup> The Underwear and Allied Products Manufacturing Code limited hours to 40 a week with a 10 per cent tolerance for emergency work.

<sup>6</sup> The Rayon and Silk Dyeing and Printing Code provided for a maximum week of 40 hours with no more than 8 hours additional a week for productive employees engaged in continuous chemical processes. The Textile Processing Code limited hours to 40 a week averaged over 12 months, a maximum of 48 a week to be allowed in 20 weeks only.

<sup>7</sup> The provisions of the Iron and Steel Code as to maximum hours of work were: not over 40 hours a week average in any 6-month period; not over 48 hours, or more than 6 days, in any one week. On May 30, 1934 the Code was amended to specify a maximum of 8 hours of work a day.

shortest week (47.5 hours) prevailed in the Pacific States, the longest (55.3 hours) in the East South Central States, and the range had increased to 7.8 hours, or roughly one working day of 8 hours. In 1929 the work week in the Pacific region was still the shortest (48.6 hours) and in the East South Central area the longest (54.2 hours), but the difference between them had narrowed to 5.6 hours.

A clearer and perhaps more accurate picture of regional differences in hours can be obtained from data showing the distribution of employees by the length of the work week. Table 10 gives the distribution of wage earners in manufacturing industries, 1929, by full time hours and geographical divisions. In the New England, Middle Atlantic, Mountain, and Pacific States more than half of the factory employees in 1929 had full time weeks of 48 hours and less. In the group of southern states, on the other hand, more than half of the employees had full time weeks of more than 54 hours. Weeks of 60 hours and longer prevailed for more than one-fourth of the employees in the East and West South Central States and for about a sixth in the South Atlantic States. Full time hours under 45 a week affected less than 10 per cent of the employees in the southern group, but prevailed for 22.6 per cent in the Pacific, and 18.9 per cent in the Middle Atlantic States.

This state of things had apparently not changed much during the depression of 1929-32. Such changes as took place in average full time hours in manufacturing industries were accompanied by the continuance of wide regional differences. A comprehensive distribution of full time hours by geographical divisions, such as exists for 1929, is unfortunately not available for the years of the depression or thereafter. But a clue to the behavior of the range of hours by regions in this period can be had from studies of several separate industries. Table 11 shows the states or cities hav-

(Footnotes to Table 7 concluded)

<sup>8</sup> The Automobile Manufacturing Code as amended on January 8, 1934 and on January 31, 1935 set a maximum of 48 hours in any one week for all nonmanagerial employees earning less than \$35 per week and further limited the average hours, in any 8-month period, of processing employees to 40 hours, and of nonprocessing employees (indirect labor) to 42 hours. The original code, effective August 26, 1933-January 8, 1934, had limited the average hours of processing employees to 35.

<sup>9</sup> The workers in this industry were covered by the provisions of several codes the majority of which provided for a maximum week of either 40 hours or of 40 hours with a tolerance of 8 hours a week for not more than 6 (or 8) weeks in six months. The Laundry and Dry-cleaning Machinery Manufacturing Code limited hours to 36 a week with not more than 72 hours overtime in six months.

<sup>10</sup> The Boot and Shoe Code provided for a 40-hour week with a tolerance of 5 extra hours a week during not more than 8 weeks in six months.

<sup>11</sup> The Leather Code provided for maxima of 40 hours a week averaged over 26 weeks and 8 hours a day.

<sup>12</sup> The Furniture Manufacturing Code limited hours to 40 a week averaged over the period December 11, 1933-April 1, 1934 and each 6-month period thereafter, with a maximum of 45 hours in any one week.

<sup>13</sup> The Cement Code limited hours to 36 a week averaged over one-half the calendar year, with maxima of 42 hours a week and 8 hours a day.

<sup>14</sup> The Glass Container Code limited hours to 40 a week averaged over six months with a maximum of 48 hours in any one week. The Flat Glass Manufacturing and the Window-Glass Manufacturing Codes limited hours to 72 in 14 days with 6 hours a week additional for workers engaged in continuous operations.

<sup>15</sup> The Rayon and Synthetic Yarn Production Code limited hours to 40 a week averaged over four weeks.

<sup>16</sup> The Petroleum Code limited hours to 40 a week, 72 in two weeks, 16 in two days.

ing the highest and lowest average full time hours per week in selected manufacturing industries, 1928 and 1932. In most of these industries there appears to have been a tendency for the differences between the longest and shortest week to increase over this period and in several (foundries and woolen and worsted goods) the change was considerable. With the exception of the men's clothing industry, which is localized in the East and Middle West, the shortest week, both in prosperity and depression, appears to have

Table 8

Distribution of Codes of Fair Competition according to Maximum Working Time specified for Factory or 'General' Workers<sup>1</sup>

Maximum number of hours per week	Codes setting specified maximum for factory or 'general' workers	
	Number	Percentage of total
27	1	.2
32	1	.2
35	13	2.3
36	21	3.8
37½	3	.5
38	1	.2
40	148	26.6
40, averaged over various periods	93	16.7
40, with peak allowances	231	41.5
44	10	1.8
45	2	.4
48	13	2.3
52	1	.2
54	1	.2
Combinations of hours averaging:		
under 40	5	.9
40 and over	13	2.3
Total	557	100.0

<sup>1</sup> Compiled from U.S. Bureau of Labor Statistics, *Monthly Labor Review*, March 1935, pp. 584 and 653-5; April 1935, pp. 896-9; and May 1935, pp. 1190-4. Covers all master codes approved except the fur-trapping code which had no hours limitations.

Table 9  
Manufacturing Industries  
Average Full Time Hours of Work per Week by Geographical Divisions, 1899-1929<sup>1</sup>

Geographical Division	Average No. of Wage Earners Employed in 1929 <sup>2</sup>	Average Full Time Hours of Work per Week					
		1899 <sup>3</sup>	1904 <sup>3</sup>	1909	1914	1919	1929
New England	1,098,514	58.5	56.8	55.7	54.1	49.6	49.8
Middle Atlantic	2,562,340	59.0	57.3	56.2	54.3	49.6	49.4
East North Central	2,542,176	59.5	57.8	56.8	54.8	51.3	50.5
West North Central	474,115	59.3	57.6	56.5	55.2	51.5	50.3
South Atlantic	912,247	61.8	60.1	58.9	57.7	53.5	53.6
East South Central	377,870	62.4	60.6	59.4	57.9	55.3	54.2
West South Central	297,743	62.8	61.0	59.8	58.5	54.9	53.7
Mountain	102,492	60.1	58.3	57.2	55.5	52.0	51.2
Pacific	471,246	59.2	57.5	56.4	54.9	47.5	48.6
United States	8,838,743	59.6	57.9	56.8	55.1	50.8	50.6

<sup>1</sup> Computed from frequency distributions published in the *U. S. Census of Manufactures, 1909, 1914, 1919, and 1929.*

<sup>2</sup> *U. S. Census of Manufactures, 1929.*

<sup>3</sup> Estimated by Paul F. Brissenden in *Earnings of Factory Workers, 1899-1927*, (U. S. Census Monograph X, 1929), p. 355.

prevailed in the Pacific States. The narrowest range in hours in 1928 was in the woolen and worsted goods industry, 4.4 hours, and the widest, 13.2 hours in sawmills. In 1932-33, the narrowest was 6.8 hours in the shoe industry, and the widest, 16 hours in foundries.

No such comparison between 1929 and 1933 can readily be made for the iron and steel industry. But data collected for March 1933<sup>3</sup> show that the full time hours per week in that industry were 49.0 in the Pittsburgh,<sup>4</sup> 56.5 in the Eastern,<sup>5</sup> and 56.4 in the Southern<sup>6</sup> districts.

Table 10  
Manufacturing Industries

Distribution of Wage Earners by Full Time Hours of Work per Week, by Geographical Divisions, 1929<sup>1</sup>

Geographical Division	Percentage of Wage Earners Whose Full Time Hours of Work per Week were:								
	40 and under	over 40, under 44	44 and over, under 45	45 and over, under 48	48	over 48, under 54	54	over 54, under 60	60 and over
New England	1.9	0.9	5.4	4.7	41.0	26.5	9.4	8.9	1.4
Middle Atlantic	4.2	2.1	12.6	7.3	28.4	24.4	6.6	10.3	4.0
East North Central	3.2	0.4	8.9	5.4	20.0	38.4	5.2	13.8	4.7
West North Central	3.3	0.3	11.3	7.3	28.4	20.3	9.6	11.2	8.2
South Atlantic	2.9	0.4	4.4	4.2	16.0	12.8	3.1	38.8	17.4
East South Central	2.8	0.1	2.3	2.2	16.1	15.9	4.2	30.2	26.2
West South Central	2.8	0.5	4.5	3.1	20.8	10.2	7.0	21.3	29.9
Mountain	2.7	0.4	6.9	6.8	39.1	2.6	9.8	21.2	10.6
Pacific	3.3	0.3	19.0	3.8	51.5	4.0	7.1	4.2	6.8
United States	3.3	1.0	9.3	5.5	26.9	25.1	6.3	15.1	7.5

<sup>1</sup> Computed from *U. S. Census of Manufactures, 1929, I, 58.*

### III Full Time Hours under Union and Non-Union Conditions

With the possible exception of the railroads, where rules regulating the hours of work are peculiar and where the

<sup>3</sup> U. S. Bureau of Labor Statistics, *Monthly Labor Review*, September 1933, p. 653.

<sup>4</sup> Pittsburgh, Western Pennsylvania, borderline of Ohio from Youngstown south to Bellaire, and panhandle of West Virginia.

<sup>5</sup> New Jersey and Delaware, and eastern parts of New York, Pennsylvania, and Maryland.

<sup>6</sup> Virginia, Tennessee, Kentucky, Alabama, Georgia, and borderline on the Ohio River south and west of Bellaire.

48-hour week has persisted longer than in any other major industry, full time hours have been generally fewer in union than in non-union industries and, within the same industry, in union than in non-union plants. In all the forty years 1890-1929 hours in the building trades have been consistently lower than in manufacturing or coal mining. In part certainly, this difference reflects the relatively greater extent of union organization in the building construction industry. Among the major manufacturing industries the shortest average work weeks in 1929 were 45.9 hours in men's clothing and 45.2 in women's clothing, both highly organized industries (see Table 4). Within such industries, the range in the length of the work week is in the main attributable to differences in hours between organized and unorganized plants. Thus in 1929, when union agreements in the men's clothing industry fixed the full time week at 44 hours, 61 per cent of the employees were reported as working between 40 and 45 hours, but

at the same time 16.5 per cent were reported as working from 45 to 48 hours and 12.5 per cent more than 48 (see Table 6). Presumably the majority working the longer weeks were employed in non-union factories—a phenomenon common to most industries that are part union and part non-union.

This fact is illustrated by the practice in bituminous coal mining. Table 12 shows the standard (full time) hours per day in union and in non-union coal fields, 1912-22. At the beginning of the period, the work day was more than one and one-half hours longer in the non-union fields. The margin narrowed with rising prosperity during the War and the progressive unionization of the industry. By 1922 the difference between the two was slight. After this, the difference probably increased once more as the union grew weaker and lost control over much of the industry in the 1920's, but the record for those years is not now available.

In large measure regional differences in hours and differ-

Table 11

Selected Manufacturing Industries  
Highest and Lowest Average Full Time Hours per Week, by States or Cities, 1928 and 1932<sup>1</sup>

Industry	1928		1932	
	Average Full Time Hours per Week	State or City	Average Full Time Hours per Week	State or City
Machine shops <sup>2</sup>	54.1	Iowa, Kansas, Louisiana	51.8	Georgia
	45.9	California	44.3	California
Foundries <sup>2</sup>	56.4	Louisiana	55.2 <sup>3</sup>	Kansas
	45.9	California	39.1	Oregon
Boots and shoes	53.1	Maine	53.0	Maine
	47.1	New Jersey	46.2	New Jersey
Cotton goods	56.1	Georgia	56.0	Georgia
	48.5	New York	48.1	New York
Woolen and worsted goods <sup>3</sup>	52.4	Pennsylvania	55.7	Southern district <sup>6</sup>
	48.0	Vermont	48.0	Rhode Island
Hosiery	55.6	North Carolina	55.4	Georgia
	48.1	New Jersey	47.7	New Jersey
Men's clothing	50.1	Eastern Pennsylvania	51.7	Eastern Pennsylvania
	40.4	Cincinnati	44.0	Chicago, Cincinnati Philadelphia, Rochester
Furniture <sup>4</sup>	57.0	Kentucky	55.0	Georgia, Virginia
	46.9	California	47.2	California
Lumber, sawmills	61.3	Florida	60.3	Alabama
	48.1	Washington	48.0	Oregon, Washington
Slaughtering and meat packing <sup>4</sup>	58.6	Michigan	57.0	Michigan
	47.9	California	46.2	Oklahoma

<sup>1</sup> Compiled from special studies of wages and hours of the U. S. Bureau of Labor Statistics.

<sup>2</sup> Figures are for 1929 and 1933; no figures reported for 1928 and 1932.

<sup>3</sup> Only Northern mills covered in 1928.

<sup>4</sup> Figures are for 1929 and 1931; no figures reported for 1928 and 1932.

<sup>5</sup> High average is due to change by one establishment from 44 hours per week in 1927 to 54 in 1929, affecting a considerable number of wage earners.

<sup>6</sup> Includes Georgia, Kentucky, South Carolina, Tennessee, and Virginia.



Table 12  
Union and Non-Union Bituminous Coal Fields  
The Basic Working Day, 1912-1922<sup>1</sup>

	Average Standard Hours of Work per Day										
	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
Union fields <sup>2</sup>	8.04	8.05	8.06	8.06	8.06	8.02	8.02	8.01	8.00	8.00	8.00
Non-union fields <sup>3</sup>	9.61	9.50	9.55	9.51	9.54	8.78	8.27	8.11	8.08	8.09	8.15

<sup>1</sup> W. E. Fisher and Anne Bezanson, *Wage Rates and Working Time in the Bituminous Coal Industry, 1912-1922* (University of Pennsylvania Press, 1932), p. 150.

<sup>2</sup> The Central Competitive Field, consisting of Illinois, Indiana, Ohio, and the Pittsburgh region of Pennsylvania; the Southwestern Interstate Field, composed of Arkansas, Kansas, Missouri, and most of Oklahoma; and several widely scattered independent districts. The scattered group included Central Pennsylvania, Michigan, and most of Western Kentucky; the union sections of West Virginia, which consisted of Coal River, Putnam County, and part of Kanawha; and certain fields west of the Mississippi River, namely, Iowa, Wyoming, Montana, and half of the production of Washington.

<sup>3</sup> In Pennsylvania the non-union areas consisted primarily of Connellsville, Somerset, Meyersdale, Indian Valley, Latrobe, Ligonier, Greensburg, and the Irwin Gas District, fields for the most part in Westmoreland, Somerset, Fayette, and Greene Counties. In West Virginia they included the Cumberland-Piedmont, Logan, Kenova-Thacker, Tug River, Pocahontas, and Winding Gulf fields. The non-union areas east of the Mississippi also embraced Maryland, Virginia, the Hazard and Harlan fields of eastern Kentucky, and Alabama. In the West, only two states, New Mexico and Utah, came under this designation.

ences between union and non-union hours are two aspects of the same picture, since union and non-union plants or operations are often, though not always, located in different places. In the building industry, the concentration of unionism in the large cities of the East, Middle West, and Pacific Coast means that working standards, whether of wages or hours, are higher in those regions than in other parts of the country. Table 13 shows the distribution of

wage earners in the construction industry by region and by full time hours of work, 1929. Of those employed in the Middle Atlantic States, 64 per cent worked 44 hours and less per week. The 36 per cent employed at longer hours probably worked on the outskirts of the large cities and in towns and villages where there was not much organized labor. On the Pacific Coast, likewise, more than half were on a short week. In the South Atlantic and East South

Table 13  
The Construction Industry

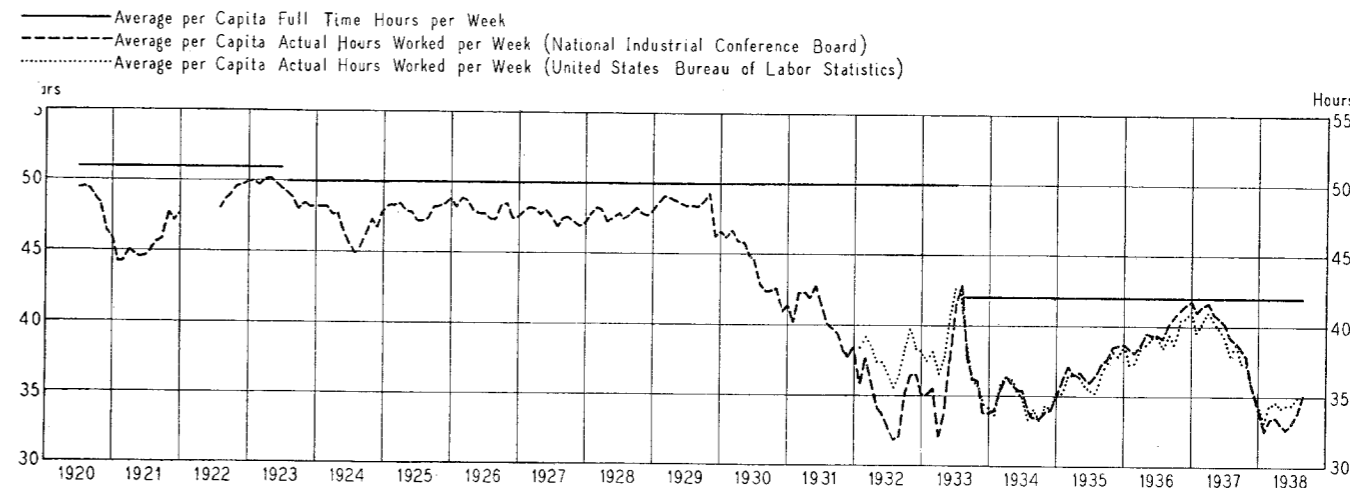
Distribution of Wage Earners by Geographical Divisions and Full Time Hours of Work per Week, June 1929<sup>1</sup>

Length of Full Time Work Week	Percentage of Wage Earners with Full Time Work Week Specified								
	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
40 hours, 5 days	10.9	37.8	10.9	9.6	9.9	5.3	3.6	7.8	14.5
44 hours, 5½ days	47.1	27.0	48.5	21.0	25.9	25.8	38.4	37.6	41.2
45 hours, 5 days	0.0	0.1	0.2	0.0	0.2	0.1	0.9	0.0	0.0
48 hours, 6 days	16.4	11.8	10.8	16.4	6.6	3.3	22.1	40.6	42.2
49½ hours, 5½ days	0.2	0.7	2.1	0.4	3.2	2.9	0.6	0.0	0.0
50 hours, 5 days	0.2	0.2	0.1	0.0	0.2	0.6	0.1	0.0	0.0
54 hours, 6 days	15.4	7.6	11.9	9.4	4.7	4.2	8.3	10.4	1.5
55 hours, 5½ days	0.0	1.8	1.7	0.9	22.2	8.6	1.2	0.0	0.0
60 hours, 6 days	9.8	13.0	13.8	42.3	27.2	49.1	24.9	3.6	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> Computed from data in the Fifteenth Census of the U. S., 1930: *Construction Industry*. Represents wage earners employed by operative builders, contractors, and sub-contractors in all kinds of construction work, including the erection of buildings, engineering, public works, and utilities construction. Covers only those workers for whom data on hours of work were reported.

Chart III

MANUFACTURING INDUSTRIES  
HOURS OF WORK, 1920-1938



Central States, half of the employees had full time weeks of 55 hours or more, and in the West South Central States one-fourth were on a 60-hour week.

This table is a composite picture of the distribution of hours in several divisions of construction, of which building is only one. In building construction alone the percentage of union and non-union employees working indicated full time hours in 1936 was as follows:<sup>1</sup>

Full Time Hours per Week	Union	Non-Union
40 hours and under	96.3%	50.7%
41 to 48 hours	3.6	41.4
Over 48 hours	0.1	7.9

IV Full Time and Actual Hours

Considerable interest should attach, for two reasons at least, to comparisons between full time and actual hours. For one thing, there is the important statistical problem of

<sup>1</sup> U. S. Bureau of Labor Statistics, *Monthly Labor Review*, October 1937, p. 798.

whether changes in full time hours are, in the long run, an accurate measure of the movement of actual hours. It is to be expected, of course, that as full time hours are materially reduced, this reduction should reflect itself in the number of hours actually worked. In a general way this is so. When the average full time work week in manufacturing declined from approximately 50 hours in 1932 to approximately 42 in 1933 and thereafter, average actual hours per week concurrently declined to a lower level. But during the nineteen years, 1920-38, for which statistics of both full time and actual hours are available, changes in business conditions were so frequent and, for a considerable part of the period, so substantial, that actual hours deviated widely from the full time and, in consequence, the movement of full time hours could hardly serve as a safe index of the movement of actual hours.

Chart III gives the monthly figures for average per capita actual hours worked per week in manufacturing,

Table 14

Twenty-five Manufacturing Industries

Hours Lost as Percentages of Full Time Hours of Work per Week, monthly, 1920-1938<sup>1</sup>

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Jan.		13.3		2.0	3.6	3.0	3.2	3.8	4.0	2.8	7.6	19.6	28.2	29.8	19.0	13.6	8.6	2.4	22.6
Feb.		13.3		2.5	3.6	3.0	2.0	3.2	3.2	1.8	6.6	15.4	24.6	28.8	15.2	11.4	9.3	1.2	20.5
Mar.		11.8		1.8	4.8	2.8	2.4	3.4	3.6	2.0	8.2	15.4	27.8	35.8	13.3	13.1	7.9	0.7	20.2
Apr.		12.4		1.6	4.6	3.8	3.8	4.2	5.2	2.4	8.4	16.2	31.6	32.0	14.5	12.6	6.0	2.6	21.4
May		12.7		2.2	6.8	4.0	4.2	3.6	4.6	2.8	10.2	14.4	32.6	24.8	15.5	13.6	6.2	3.3	22.2
June	3.1	12.5		2.9	8.6	5.2	4.2	4.6	4.0	3.2	11.0	17.4	34.4	17.0	15.7	14.3	6.2	4.3	21.2
July	2.9	11.4	5.9	1.6	10.0	5.2	5.0	6.0	4.8	3.2	14.2	19.8	36.2	14.2	19.0	13.1	6.9	6.7	19.5
Aug.	3.3	10.2	4.5	2.4	9.0	4.8	5.0	4.8	4.2	3.4	15.2	20.6	35.8	9.0	20.2	11.0	4.5	7.4	16.4
Sept.	4.5	9.8	3.9	4.0	7.2	3.2	3.0	4.6	3.4	2.4	15.2	21.2	29.6	13.6	20.5	10.2	3.1	8.8	
Oct.	5.3	6.5	2.7	3.0	5.0	3.2	2.6	5.2	4.2	1.4	14.8	23.8	27.0	14.0	19.3	8.3	2.1	10.0	
Nov.	9.0	7.6	2.5	3.6	6.2	2.8	4.8	5.8	4.6	7.6	18.0	24.4	27.0	19.5	19.0	8.1	1.2	15.2	
Dec.	10.2	6.7	2.2	3.6	4.0	2.0	4.6	5.4	4.0	6.8	17.2	23.2	29.8	19.5	16.7	7.9	0.5	18.8	
Average	5.5	10.6	3.5	2.6	6.2	3.6	3.8	4.6	4.2	3.4	12.2	19.2	30.4	22.1	17.4	11.4	5.2	6.7	20.5

<sup>1</sup> Hours lost are the amount by which actual fall short of full time per capita hours of work. The series of actual hours is that of the National Industrial Conference Board. Full time hours are estimated at 51, June 1920-June 1923; at 50, July 1923-July 1933; and at 42 thereafter.

Table 15

## Bituminous Coal Mining

Average Full Time and Actual per Capita Hours of Work per Week and Hours Lost as Percentages of Full Time Hours of Work per Week, 1932-1938

	1932 Aver- age	1933 Jan.- Sept.	1933 Oct.- Dec.	1933 Aver- age	1934 Jan.- Mar.	1934 Apr.- Dec.	1934 Aver- age	1935 Aver- age	1936 Aver- age	1937 Aver- age	1938 Jan.- July
Average full time hours per week <sup>1</sup>	48.6	48.6	40.0	46.5	40.0	35.2	36.4	35.1	35.1	35.0	35.0 <sup>2</sup>
Average actual per capita hours per week <sup>3</sup>	27.1	29.2	29.8	29.4	32.0	25.5	27.1	26.3	28.8	27.8	21.4
Hours lost as percentages of full time hours per week <sup>4</sup>	44.2	39.9	25.5	36.8	20.0	27.6	25.5	25.1	17.9	20.6	38.9

<sup>1</sup> See Table 3.<sup>2</sup> Estimated by National Bureau of Economic Research on the basis of the Appalachian Agreement which became effective on April 2, 1937 and provided for the continuation of the 7-hour day, 5-day week.<sup>3</sup> U. S. Bureau of Labor Statistics, *Monthly Labor Review*, monthly.<sup>4</sup> Hours lost are the amount by which actual fall short of full time per capita hours of work.

1920-38, and the average per capita full time hours in effect over the same period. It is clear from this chart that, except perhaps for several years during the 1920's, measuring changes in average per capita actual hours worked by changes in average per capita full time hours would lead to quite misleading conclusions.

A second aspect of the relation of full time and actual hours has to do with the expectations commonly associated with reductions in the length of the full time week. Much of the advocacy of the shorter week is due to the belief that fewer per capita hours cause increased employment. Testing this belief involves studies of the movement of employment and full time hours which are not the subject of this *Bulletin*. A closely related hypothesis, at least implicit in the theories of the short week, is that a drastically shorter week may produce more regular employment for those who are employed by narrowing the difference between the actual and full time hours per week. It is possible to subject this hypothesis to some statistical test by comparing per capita actual with full time hours and by computing the time lost. Time lost may be defined as the amount by which

actual fall short of full time hours, expressed as a percentage of the full time week. In making these computations it has been assumed that the average full time week in manufacturing was 51 hours from 1920 to 1923, when average full time hours were reduced in the iron and steel industry; 50 hours, 1923-33; and 42 thereafter.

Table 14 shows the percentage of time lost in manufacturing, monthly, 1920-38. From these data there seems to be little evidence, for the period 1920-38, that the percentage of time lost has been much affected by reductions in full time hours. Comparing similar periods of business activity, percentages of time lost appear remarkably steady. During the latest depression, 1937-38, although the average full time week was at least 8 hours less than in 1932-33, the percentages of time lost rose to levels not much different from those of 1932-33, if the greater severity of the earlier depression is taken into account. Much the same thing happened in the bituminous coal industry. In this industry, whose full time hours per week were 48 in 1932 and 35 in 1938, the percentage of time lost in 1932 was 44.2, and during the first seven months of 1938 was 38.9. Table 15

Table 16

## Specified Occupations, Selected Foreign Cities

Full Time Hours of Work per Week, October 1937<sup>1</sup>

Occupation	Melbourne Australia	Montreal Canada	Bordeaux France	London England	Stockholm Sweden
Iron molders	44	44-50	40	47	48
Bricklayers and masons	44	40-44	40	44	48
Machine compositors (book and job)	44	44-48	40	48	48
Bakers	44	48-60	40	48	48
Unskilled labor (employed by local authorities)	44	48	40	47	48

<sup>1</sup> International Labour Office, *International Labour Review*, Vol. XXXVII, No. 3, March 1938, p. 382.

shows the average per capita full time and actual hours per week and the percentages of time lost in the bituminous coal industry, 1932-38.

## V Full Time Hours in Foreign Countries

International comparisons of the length of the working week must rest on fragmentary data. Such as they are they seem to indicate that in 1937 the shortest week prevailed in France and still does in the United States. In this country most employees in manufacturing, coal mining, and building, work 40 hours or less. In 1937 in France the 40-hour week was well-nigh universal and applied to all classes of labor. In most other countries the 48-hour week was still the most common although shorter hours were to be found in the building industry. Australian labor, except groups of transport workers, seemed to be on a 44-hour week. No figures on full time hours of work are available for Germany. In Japan the full time week is probably close to 60 hours, since available sources of information report the hours per day in 1937 and 1938 as close to 10.<sup>8</sup>

Table 16 gives the full time hours per week in specified occupations in selected foreign cities, October 1937. These figures are generally described by the International Labour Office as the normal statutory hours of work or the normal hours of work as fixed by collective agreements. In most instances, then, they pertain to the most highly unionized occupations, which may be expected to work on shorter schedules of hours than other classes of labor.

<sup>8</sup> International Labour Office, *International Labour Review*, Vol. XXXVIII, No. 1, July 1938, p. 122.

Table 17

## Great Britain, Specified Industrial Groups

Distribution of Wage Earners by Average Normal Hours of Work per Week, October 1935<sup>1</sup>

Industry Group	Percentage of wage earners whose normal weekly hours of work were:				Average normal hours per week <sup>2</sup>
	44 or less	over 44 under 47	47 to 48	over 48	
Mining and quarrying (other than coal mining)	29.1	16.0	39.3	15.6	46.4
Treatment of non-metalliferous mine and quarry products	11.2	10.2	47.2	31.4	48.6
Brick, pottery, glass, chemical, etc.	14.3	7.7	65.4	12.6	47.2
Metal, engineering, shipbuilding, etc.	6.9	5.7	83.0	4.4	46.8
Textile	4.0	4.2	85.2	6.6	47.8
Leather	3.4	3.5	83.1	10.0	47.8
Clothing	13.8	16.4	66.3	3.5	47.0
Food, drink, and tobacco	12.4	8.6	65.5	13.5	47.7
Woodworking	18.7	15.1	51.4	14.8	46.9
Paper, printing, stationery, etc.	9.9	7.5	78.7	3.9	47.3
Building, contracting, etc.	35.9	29.8	9.5	24.8	46.8
Other manufacturing industries	9.7	12.4	67.3	10.6	47.2
Transport and storage (other than railways)	7.4	2.5	79.3	10.8	47.9
Public utility services	8.2	4.8	72.9	14.1	47.3
Government industrial establishments	3.0	0.2	96.8	0.0	47.3
All above industries	10.6	8.7	71.7	9.0	47.2

<sup>1</sup> Ministry of Labour Gazette, July 1937, p. 258.<sup>2</sup> Excluding mealtimes, except in the case of those shift-workers for whom no definite interval for meals was recognized.

More comprehensive data are available for Great Britain. Table 17 shows for October 1935 the normal week in manufacturing, mining and quarrying (other than coal), transport (other than railways), and certain miscellaneous occupations.

The predominant work week in Great Britain in 1935 was about 48 hours. Approximately 72 per cent of the employees had full time hours between 47 and 48 a week. Nine per cent worked longer than 48 hours and nearly 20 per cent were on schedules of less than 47 hours a week. The shortest weeks prevailed in mining and quarrying (other than coal mining), where 29 per cent of the employees worked 44 hours or less a week, and in building, where 36 per cent worked 44 hours or less. In the important manufacturing industries of metals, machinery, shipbuilding, textiles, and paper and printing, the 48-hour week was the most common working period.

## VI Summary

Full time hours, most conveniently defined as the number of hours per week beyond which a shop is normally not expected to work, have steadily declined in this country over the last century. Since 1890 they have been reduced roughly 18 hours in manufacturing, 16 in building, 12 in rail transportation, and 25 in both anthracite and bituminous coal mining. In the last half century the greatest reduction took place during the years of the World War and of the N.R.A. During the War, railroad employees went from the 60- to the 48-hour week as their hours per day were reduced from 10 to 8 either by legislation or by orders of